Syllabus for Engr225 Spring 2018
Mechanics of Materials

Instructor
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Text

Tools
A scientific calculator will be required. Flash drives, colored pencils, a protractor, a ruler, and graph paper will be helpful.

Meeting Times
Daily 11-11:50am, SAM206

Content
This course is an introduction to the concepts of stress, deformation and strain in solid materials. Basic relationships between loads, stresses, and deflections of structural and machine elements such as rods, shafts and beams are developed. The load-carrying capacity of these elements under tension, compression, torsion, bending and shear forces are considered.

Course Format
There will be daily lectures. Your active participation is essential in making the class a success. Read the material before class and come equipped with questions.

Course-level Learning Outcomes
After successful completion of this course, students will be able to do the following:
1. Describe the concepts of normal and shear stress and strain and interpret stress-strain diagrams.
2. Solve problems involving the mechanical properties of materials that are subject to various types of loadings (axial load, torsion, bending, transverse shear, combined loadings), and calculate resulting stresses and strains and material deformation.
3. Compute the stress and strain states both analytically and graphically at various orientation angles.
4. Compute the principal normal and maximum shear stresses.
5. Draw the shear force and bending moment diagrams and determine the maximum shear and maximum bending moment for various types of beam loadings.
6. Compute the deflection of beams under various loadings.

Assessment
Exams: 70%
Homework: 20%
Project: 10%

Note: This syllabus is subject to change. Please check online for the most recent version. I usually include your feedback on office hours etc.
Exams
There will be 5-6 one-hour exams. The exams will all count equally (no 'special' final exam). The lowest score will be dropped (this might be an exam that did not go well or an exam that you missed). There won't be a makeup exam for the first exam that you miss. Exam dates posted on the website are tentative, but exams will typically be held on Fridays.

Homework
There will be two types of assignments, Hw (Homework) and MM (Mecmovie). Details on how to submit these are given in class.
The Hw assignments will be due once a week, typically on Tuesday. The problem sets will be available on the class web site. Solutions will be posted on the web site as well. The lowest homework score will be dropped.
The MM assignments will be done online. When done, you will add your name, then print a confirmation copy and submit that in class. Lowest score will be dropped.
Your homework must be turned in on time. Late homework may have a deduction of 20%/day.

Project
As part of your term project you will (a) photograph examples of 'MOM in action', and (b) share your findings in a short presentation at the end of the quarter. Details will be posted on the web site and announced in class.

Special Assistance
Students with documented disabilities who need course accommodations, have emergency medical information, or require special arrangements for building evacuation should contact the instructor within the first two weeks of class.

Title IX
Seattle Central College seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/misconduct/assault we encourage you to report this. For more information about your options at Seattle Central, please go to: http://seattlecolleges.edu/HR/about.aspx

And let’s not forget ... ... to have fun 😊